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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,108	07/30/2003	Stephan Bolz	071308.0457	8321

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EXAMINER

NGUYEN, KHANH V

ART UNIT	PAPER NUMBER
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2817

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/630,108	BOLZ ET AL.	
	Examiner	Art Unit	
	Khanh V. Nguyen	2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/03 & 02/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claims 1, 9, 10, 12, 15, 17 are objected to because of the following informalities:

Claim 1, lines 8-9, "the PWM output" should correctly be -- **a PWM output** --.

Claim 1, line 11, "the sum" should correctly be -- **a sum** --.

Claim 1, line 11, "the pulse" should correctly be -- **a pulse** --.

Claim 1, lines 11-12, "the inverted" should correctly be -- **an inverted** --.

Claim 9, line 2, "input side" should correctly be -- **input sidesu** --. Note,
"comparator" has **two inputs**.

Claim 9, line 3, "with" should correctly be -- **wherein** --.

Claim 9, line 4, "as a function of this" should correctly be -- **for** --.

Claim 10, line 2, "input side" should correctly be -- **input sidesu** --. Note,
"comparator" has **two inputs**.

Claim 12, lines 13-14, "the PWM output" should correctly be -- **a PWM output** --.

Claim 12, line 16, "the sum" should correctly be -- **a sum** --.

Claim 12, line 16, "the pulse" should correctly be -- **a pulse** --.

Claim 12, lines 16-17, "the inverted" should correctly be -- **an inverted** --.

Claim 15 needs to be rewritten, see claim 11.

Claim 17, line 6, "the sum" should correctly be -- **a sum** --.

Claim 17, line 6-7, "the pulse duty factorsu" should correctly be -- **pulse duty factors** --.

Claim 17, should “the third clock signal” be -- an inverted third clock signal --. See independent claims 1 and 12, which disclose “an inverted third clock signal”.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4, 5, 7, 9, 10, 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4, “the regulating circuit has a first comparator which generates the first regulating signal ...” appears to be unclear since claim 2 also discloses “the regulating circuit has an addresser which generates the first regulating signal ...” Does applicant mean both “first comparator” and “addresser” capable of generating “first regulating signal”? See paragraph [0050].

Claim 5, “a second voltage divider” claimed, but it not clear where is “**a first voltage divider**”.

Claim 5, which needs to be rewritten, since it is not clear which “terminals” are intended. Maybe it should be rewritten as “wherein the reference potential includes a voltage divider coupled between a voltage supply and ground.”

Claim 7, which depends on claim 1 recited "a second comparator", but "a first comparator" is claimed in claim 4.

Claim 9, recites the limitation "the first regulating signal". There is insufficient antecedent basis for this limitation in the claim. Note, 'a first regulating signal' is claimed in claims 2 and 4.

Claim 10, it is not clear which "**to this**" is intended.

Claim 17, line 9, it is not clear which "**the output side**" is intended.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 20 is rejected under 35 U.S.C. 102(e) as being anticipated by Groves, Jr. et al. (6,593,807).

Groves, Jr. et al. (Fig. 4) discloses class D amplifier uses uses a summation of two or more **PWM** output stages to achieve an increased dynamic range and improved linearity for any given **clock** operating speed and a microcontroller (MCU) having the functions as claimed, see ABSTRACT.

Allowable Subject Matter

Claims 1-19 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claims 1-19 call for, among others, a regulating circuit which regulates the pulse width of the third clock signal until the sum of the pulse duty factors of the second clock signal and of the inverted third clock signal is 100%.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional references (Adrian et al. (5,617,058); Nalbant (6,356,151)) show further analogous prior art circuitry class D amplifier.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh V. Nguyen whose telephone number is (571) 272-1767. The examiner can normally be reached from 8:00 AM - 3:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571) 272-1769. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Khanh Van Nguyen', with a long horizontal flourish extending to the right.

KHANH VAN NGUYEN
PRIMARY EXAMINER
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